

REMARKS

Claim 50 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for claims 26-30, 32, 38, 47, and 52 given the broadest and reasonable interpretation of the specification these claims pertain merely to a mulch that is colored as an indicator and does not involve any chemical reactions (specification page 10 line 14-15), the specification does not reasonably provide enablement for claim 50. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with claim 50. The specification does not disclose what makes the color change or face, is it a chemical process? How does the chemical process work and what are the chemicals and reactions involved?

It is known in the art to use litmus paper or other chemicals which change colors based on pH. Therefore, such information which is known in the art does not have to be disclosed in the specification. The use of these chemicals on a mulch is not known in the art and this is what is new and novel about the claims of the present invention.

The specification specifically describes the dyes that are selected which are added to the mulch change color based on the acidity, moisture or chemical content of the soil (specification page 7 line 8-12). The reasons for the color changing is a chemical process as stated above which would allow the dye to change color based on the acidity, moisture or chemical content of the soil. How a dye changes color based on acidity, moisture or chemical content is known in the art.

Claim 50 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,932,156 to Underwood.

Regarding Claim 50, Underwood teaches a colored mulch product (Underwood abstract line 1) wherein the color fades or disappears (Underwood abstract line 2) in response to a lack of nutrient or fertilizer in the mulch (Underwood abstract line 4 "ambient weather conditions"; the examiner views "nutrient" as water and when it rains, rain is an element of ambient weather conditions, objects inherently tend to appear vibrant. As the object dries (i.e. as it losses the nutrient water) it will inherently fade).

As stated previously, Underwood relates to retarding the fading of the color of mulch. Applicant has amended claim 50 to remove the word nutrient. Since the Examiner states that Underwood only teaches a color change based on the use of water when it rains, and does not teach a color change based on lack of fertilizer. Therefore claim 50 is not anticipated or obvious over Underwood.

Claim 47 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,067,140 to Thomas.

Regarding Claim 47, Thomas teaches a colored mulch product (Thomas abstract) comprising: a material comprising a fiber cellulose (Thomas abstract first line), clay, loam, sand, and/or a combination of same; a binding agent (Thomas Col. 1 line 30 "wetting agent" and Col. 4 line 35-41); and a dye and/or pigment (Thomas Col. 1 line 35) produced by a lifting and tumbling agglomeration operation (Thomas Col. 2 line 65-66. Applicant has not claimed any limitation in this claim that pertains to the mulch acting as an indicator).

Amended claim 47 requires said dye indicates to a user environmental conditions of the soil where said mulch is placed. Thomas does not teach that the dye indicate to the user environmental conditions. Therefore claim 47 is not anticipated or obvious over Thomas.

Claims 26, 27, 28, 29, 30, 50, 52 are rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 4,932,156 to Underwood or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 4,297,810 to Hansford in view of U.S. Patent No. 2,526,938 to Davis et al.

Underwood relates to retarding the fading color of mulch. With regards to claim 26, nowhere does Underwood teach that the dye indicate to a user environmental conditions of the soil where the mulch is placed. Therefore, claim 26 is not anticipated or obvious over Underwood. Regarding claim 27, for the reasons stated above for claim 26, claim 27 is not anticipated or obvious over Underwood.

With regard to claim 28, as stated above, Underwood does not discuss whatsoever that the dye indicates the acidity of the soil. Therefore, claim 28 is not anticipated or obvious over Underwood.

Regarding claim 29, Underwood teaches a retarding of color due to rain. Underwood does not teach the moisture content of the soil. Therefore, claim 29 is not anticipated or obvious over Underwood. Regarding claim 30, Underwood does not teach or relate to the dye indicating the chemical content of the soil. Therefore, claim 30 is not anticipated or obvious over Underwood.

Regarding claim 50 for the reasons stated above for claim 50, claim 50 is not anticipated or obvious over Underwood.

Regarding claim 52, Underwood does not teach a method wherein a mulch changes colors based on conditions of the soil and in response to this chemicals are added to the soil. Therefore, claim 52 is not anticipated or obvious over Underwood.

Regarding Claims 26, 28, 29, 30, 50, and 52, Hansford teaches a colored mulch (Hansford 2 line 14) and the importance of moisture (Hansford Col. 2 line 63) to the plants thus indicating general knowledge in the field of the plant husbandry that it is desirable to monitor the moisture conditions and to provide adequate moisture to ensure healthy development and that it is known to color mulch. Hansford is silent on the mulch fading in response to a lack of nutrient/chemical (i.e. water). However, Davis teaches a colorant additive that changes color as an indicator that water (i.e. nutrient) is present or absent (Davis Col. 1 line 35-41). It would have been obvious to one of ordinary skill in the art to modify the teachings of Hansford with the teachings of Davis at the time of the invention for the advantage of the known ability to monitor the moisture content as taught by Davis to ensure healthy growth and development of plants. The modification is merely the selection of a known alternate equivalent selected for the known advantage of its indicator properties. It would be obvious to one of ordinary skill in the art to perform the method step to add water (i.e. chemical) to the mulch when the mulch appears to have a low moisture concentration.

Hansford relates to a hydromulch, or a sprayable mulch. As stated in Hansford, it is preferred that the mulch composition include a dye or coloring agent, such as Calcozine Green. While green dye is preferred for aesthetic reasons, other colors may be used. The coloring

agent is used chiefly for aesthetic purposes, in that it serves no mechanical or organic purpose in the composition. The coloring material functions to show the operator of the spraying equipment what areas have been colored with hydromulch and thereby avoid gaps and overlapping in the application of the hydromulch. The hydromulch of Hansford is used by placing it in tanks which are subsequently filled with water to provide a pumpable suspension. Hansford does not teach that it is desirable to monitor water conditions. The Examiner states that Davis teaches a colorant additive that changes color as an indicator that water is present or absent. Since Hansford states that the coloring agent is for aesthetic purposes only, there is no teaching to combine the references.

Claim 26 requires the dye indicate to a user environmental conditions of the soil. Since Hansford states that the dye is purely aesthetic, and there is no reasons to combine with Davis, claim 26 is not obvious over Hansford in view of Davis.

Claim 28 requires that the dye indicate the acidity of the soil. Since Hansford states that the dye is purely aesthetic, and there is no teaching to combine with Davis, claim 28 is not obvious over Hansford in view of Davis.

Claim 29 requires the dye indicate the moisture content of the soil. Since Hansford states that the dye is purely aesthetic, and there is no teaching to combine with Davis, claim 29 is not obvious over Hansford in view of Davis.

Claim 30 requires the dye indicate the chemical content of the soil. Since Hansford states that the dye is purely aesthetic, and there is no teaching to combine with Davis, claim 30 is not obvious over Hansford in view of Davis.

Claim 50 requires that the color fade or disappear in response to the lack of fertilizer in the mulch. Since Hansford states that the dye is purely aesthetic, and there is no teaching to combine with Davis, claim 50 is not obvious over Hansford in view of Davis.

Claim 52 requires the mulch to change colors based on conditions of the soil, and that chemicals be added to the soil based on the color of the mulch. Since Hansford states the dye is purely aesthetic, and there is no teaching to combine with Davis, claim 52 is not obvious over Hansford in view of Davis.

Regarding Claim 27, Hansford as modified teaches fertilizer and this inherently teaches nitrogen, phosphorous, and potassium fortifiers (Hansford Col. 5 line 4)

For the reasons stated above for claim 26, claim 27 is not obvious over Hansford in view of Davis.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,297,810 to Hansford in view of U.S. Patent No. 2,526,938 to Davis et al as applied to claim 26 above, and further in view of U.S. Patent No. 5,734,167 to Skelty.

Regarding Claim 32, Hansford as modified teaches coloring the mulch, but is silent on the dye is florescent. However, Sketly teaches it is old and notoriously well-known to dye agricultural products with florescent dye allowing the mulch to glow in the dark (Skelty Col. 1 line 35-45). It would have been obvious to one of ordinary skill in the art to further modify the teachings of Hansford with the teachings of Skelty at the time of the invention since the modification is merely the selection of a known alternate coloring for the advantage of enabling safe night time agricultural operations as taught by Skelty (Skelty Col. 1 line 1-26).

For the reasons stated above for claim 26, claim 32 is not obvious over Hansford in view of Davis and Skelty.

Claims 26-30, 38 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,324,781 to Stevens in view of U.S. Patent No. 5,387,745 to Brendle.

Regarding Claims 26, 28, 29, and 30, Stevens teaches a colored mulch product (Stevens abstract line 2) consisting essentially of: a material comprising a fiber cellulose, clay, loam, sand, and/or a combination of same; a binding agent (Stevens Col. 2 line 2); and a dye and/or pigment (Stevens Col. 6 line 35). Stevens teaches a dye, but is silent on the dye **indicates** to a user environmental conditions of the soil where said mulch is placed; the dye **indicates** to a user the acidity of said soil; the dye **indicates** to a user the moisture content of said soil; or the dye **indicates** to a user the chemical content of said soil.

However, Brendle teaches that is old and notoriously well-known to use color (i.e. dye and/or pigment) in agricultural applications as an indicator, a label, a marker. Brendle is cited **merely to teach** that is known **to use color as an indicator of a particular characteristic of a parcel of land.** Purely as an example, in the case of Brendle, it is an area of land that receives a coating of a chemical composition that was pre-treated with a colorant (Brendle abstract and Col. 2 line 21-40). In other words, Brendle can apply to teaching an area of land that receives a coating of mulch composition that was pre-treated with a dye/pigment. It would have been obvious to one of ordinary skill in the art to modify the teachings of Stevens with the teachings of Brendle at the time of the invention for the advantage of ease of distinction and the known advantage that the presence of color has been found that misapplications of substances is more easily avoidable as taught by Brendle (Brendle Col. 2 line 58-60) (i.e. distinction of

knowing where a pesticide has been applied, knowing where a particular species/variety of plant has been planted, etc). It is generally knowledge to of one of ordinary skill in the art that different plant varieties require different soil conditions. Thus, it would have been obvious to one of ordinary skill in the art to use a green colored mulch to distinguish where grass seed was plant and a red colored mulch to distinguish where tomatoes were planted. These two colors would inherently indicate different soil conditions since grass and tomato plants require different levels of moisture, different levels of acidity, and different levels of fertilization. Using color as an indicator/marker of any property, process, or treatment it an obvious modification for one of ordinary skill in the art as supported by Brendle.

Stevens teaches a dye for aesthetic reasons only. Stevens does not teach that the dye be used as an indicator for environmental conditions of the soil where the mulch is placed. Brendle only teaches using the dye to show where a treatment of the soil has been placed, such as where a pesticide has been sprayed.

Claim 26 requires the dye indicate to a user environmental conditions of the soil. Since Stevens states that the dye is purely aesthetic, and Brendle teaches only using a dye to show where a treatment is placed, claim 26 is not obvious over Stevens over Brendle.

Claim 28 requires that the dye indicate the acidity of the soil. Since Stevens states that the dye is purely aesthetic, and Brendle teaches only using a dye to show where a treatment is placed, claim 28 is not obvious over Stevens over Brendle.

Claim 29 requires the dye indicate the moisture content of the soil. Since Stevens states that the dye is purely aesthetic, and Brendle teaches only using a dye to show where a treatment is placed, claim 29 is not obvious over Stevens over Brendle.

Claim 30 requires the dye indicate the chemical content of the soil. Since Stevens states that the dye is purely aesthetic, and Brendle teaches only using a dye to show where a treatment is placed, claim 30 is not obvious over Stevens over Brendle.

Regarding Claim 27, Stevens as modified teaches the mulch comprising; nitrogen, phosphorous, and potassium fortifiers (Stevens abstract last line).

For the reasons stated above for claim 26, claim 27 is not obvious over Stevens over Brendle.

Regarding Claim 38, Stevens as modified teaches the mulch is the same or similar color of an actual plant, flower, fruit, or vegetable of a seed planted with the mulch (Stevens Col. 6 line 37).

As stated previously, Stevens states that “for example, the color may be green to match a lawn or grass area.” Claim 38 requires that the mulch be the same or similar color of an actual plant, flower, fruit, or vegetable of a seed planted with the mulch to indicate what is planted underneath the mulch. Here Stevens teaches making the mulch mat look like a grass or lawn area, not that the mulch match the color to indicate what plant is planted under the mulch. Stevens does not teach having any seed under the mulch. Stevens purely paints the mulch for aesthetic reasons, to make the mulch mat look green like grass. Therefore, claim 38 is not obvious over the prior art.

Regarding Claim 52, Stevens as modified teaches a method of placing colored mulch on top of soil; inherently changing the colors of the mulch based on the condition of the soil since when it rain, rain is an element of ambient weather conditions, there is more water in the soil

objects tend to appear vibrant, but as the object dries (i.e. as it losses the nutrient water) it will inherently fade. Thus the colors inherently change based on the moisture conditions of the soil

Stevens is silent on adding chemicals to the soil based on the color of the mulch.

However, on one hand, it is old and notoriously well-known in the art of plant husbandry to observe and test soil conditions to see if they meet the desired parameters. It would have been obvious to one of ordinary skill in the art, at the time of the invention, if they observed that the mulch was faded in appearance because of reduced moisture levels, that one of ordinary skill in the art would obviously know to add the chemical (i.e. water) to improve the moisture conditions depending on the needs of plant varieties located in that area. On the other hand, it is old and notoriously well-known to use color as an indicator as discussed in the preceding paragraphs. If grass was planted with the green colored mulch it would be obvious to one of ordinary skill in the art to add chemicals to that area to meet the needs of grass.

Claim 52 requires a method for adjusting the chemical content of soil comprising: placing a colored mulch on top of soil; changing colors of the mulch based on condition of the soil; and adding chemicals to the soil based on the color of the mulch. The claim requires that based on the color of the mulch a certain soil condition exists which requires chemicals to be added. Neither Stevens or Brendle teaches the mulch indicating to the user the condition of the soil to the user. Further, neither Stevens or Brendle teach adding chemicals to the soil. Therefore, claim 52 is not obvious over Stevens in view of Brendle.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,324,781 to Stevens in view of U.S. Patent No. 5,387,745 to Brendle as applied to claim 26 above, and further in view of U.S. Patent No. 5,734,167 to Skelty.

Regarding Claim 32, Stevens as modified teaches coloring the mulch, but is silent on the dye is florescent. However, Skelty teaches it is old and notoriously well-known to dye agricultural products with florescent dye allowing the mulch to glow in the dark (Skelty Col. 1 line 35-45). It would have been obvious to one of ordinary skill in the art to further modify the teachings of Stevens with the teachings of Skelty at the time of the invention since the modification is merely the selection of a known alternate coloring for the advantage of enabling safe night time agricultural operations as taught by Skelty (Skelty Col. 1 line 1-26).

Regarding claim 32, for the reasons stated above for claim 26, claim 32 is not obvious over the prior art.

Applicant believes that the application is now in condition for allowance.

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Respectfully submitted,



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